CLAIMS

What is claimed is:

1. A light-emitting panel comprising:

a first substrate;

a second substrate opposed to the first substrate;

a plurality of sockets, wherein each socket of the plurality of sockets comprises a cavity and wherein the cavity is patterned on the first substrate so as to be formed in the first substrate;

a plurality of micro-components, wherein at least one micro-component of the plurality of micro-components is at least partially disposed in each socket;

a plurality of electrodes, wherein at least two electrodes of the plurality of electrodes are adhered to only the first substrate, only the second substrate, or at least one electrode is adhered to the each of the first substrate and the second substrate and wherein the at least two electrodes are arranged so that voltage supplied to the at least two electrodes causes one or more micro-components to emit radiation.

2. The light-emitting panel of claim 1, wherein the cavity is in a shape selected from the group consisting of a cube, a cone, a conical frustum, a paraboloid, spherical, cylindrical, a pyramid, a pyramidal frustum, a parallelepiped, and a prism.

3. The light-emitting panel of claim 1, wherein the depth of the cavity is selected to achieve a specific field of view for the light-emitting display.

4. The light-emitting panel of claim 1, wherein at least one socket is at least partially coated with phosphor.

5. The light-emitting panel of claim 1, wherein at least one socket is at least partially coated with a reflective material.

6. The light-emitting panel of claim 1, further comprising an adhesive or bonding agent disposed in the cavity.

7. The light-emitting panel of claim 1, wherein at least one socket comprises at least one enhancement material selected from the group consisting of anti-glare coatings, touch sensitive surfaces, contrast enhancement coatings, and protective coatings.

8. The light-emitting panel of claim 1, wherein at least one socket comprises at least one enhancement material selected from the group consisting of transistors, integrated-circuits, semiconductor devices, inductors, capacitors, resistors, diodes, control electronics, drive electronics, pulse-forming networks, pulse compressors, pulse transformers, and tuned-circuits.

9. A light-emitting panel comprising:

a first substrate comprising a plurality of material layers;

a second substrate opposed to the first substrate;

a plurality of sockets, wherein each socket comprises a cavity and wherein the cavity is formed by selectively removing a portion of the material layers;

a plurality of micro-components, wherein at least one micro-component of the plurality of micro-components is at least partially disposed in each socket;

a plurality of electrodes, wherein at least one electrode of the plurality of electrodes is disposed on or within the material layers.

10. The light-emitting display of claim 9, wherein at least two electrodes of the plurality of electrodes are arranged so that voltage supplied to the at least two electrodes causes

one or more micro-components to emit radiation throughout the field of view of the light-emitting panel without crossing the at least two electrodes.

11. The light-emitting panel of claim 9, wherein the cavity is in a shape selected from the group consisting of a cube, a cone, a conical frustum, a paraboloid, spherical, cylindrical, a pyramid, a pyramidal frustum, a parallelepiped, and a prism.

12. The light-emitting panel of claim 9, wherein the depth of the cavity is selected to achieve a specific field of view for the light-emitting display.

13. The light-emitting panel of claim 9, wherein at least one socket is at least partially coated with phosphor.

14. The light-emitting panel of claim 9, wherein at least one socket is at least partially coated with a reflective material.

15. The light-emitting panel of claim 9, further comprising an adhesive or bonding agent disposed in the cavity.

16. The light-emitting panel of claim 9, wherein the plurality of material layers comprise at least one enhancement material selected from the group consisting of anti-glare coatings, touch sensitive surfaces, contrast enhancement coatings, and protective coatings.

17. The light-emitting panel of claim 9, wherein the plurality of material layers comprise at least one enhancement material selected from the group consisting of transistors, integrated-circuits, semiconductor devices, inductors, capacitors, resistors, diodes, control

electronics, drive electronics, pulse-forming networks, pulse compressors, pulse transformers, and tuned-circuits.

18. A light-emitting panel comprising:

a first substrate;

a second substrate opposed to the first substrate;

a plurality of sockets, wherein each socket of the plurality of sockets comprises:

a cavity, wherein the cavity is patterned on the first substrate so as to be formed in the first substrate; and

a plurality of material layers, wherein the plurality of material layers are disposed on the first substrate such that the plurality of material layers conform to the shape of the cavity of each socket;

a plurality of micro-components, wherein at least one micro-component of the plurality of micro-components is at least partially disposed in each socket;

a plurality of electrodes, wherein at least one electrode of the plurality of electrodes is disposed within the material layers.

19. The light-emitting display of claim 18, wherein at least two electrodes of the plurality of electrodes are arranged so that voltage supplied to the at least two electrodes causes one or more micro-components to emit radiation throughout the field of view of the light-emitting panel without crossing the at least two electrodes.

20. The light-emitting panel of claim 18, wherein the shape of the cavity is selected from the group consisting of a cube, a cone, a conical frustum, a paraboloid, spherical, cylindrical, a pyramid, a pyramidal frustum, a parallelepiped, and a prism.

21. The light-emitting panel of claim 18, wherein the depth of the cavity is selected to achieve a specific field of view for the light-emitting display.

22. The light-emitting panel of claim 18, wherein at least one socket is at least partially coated with phosphor.

23. The light-emitting panel of claim 18, wherein at least one socket is at least partially coated with a reflective material.

24. The light-emitting panel of claim 18, further comprising an adhesive or bonding agent disposed in each socket.

25. The light-emitting panel of claim 18, wherein the material layers comprise at least one enhancement material selected from the group consisting of anti-glare coatings, touch sensitive surfaces, contrast enhancement coatings, and protective coatings.

26. The light-emitting panel of claim 18, wherein the material layers comprise at least one enhancement material selected from the group consisting of transistors, integrated-circuits, semiconductor devices, inductors, capacitors, resistors, diodes, control electronics, drive electronics, pulse-forming networks, pulse compressors, pulse transformers, and tuned-circuits.

27. A method for forming a socket for use in a light emitting display, comprising the steps of:

disposing a plurality of material layers, wherein the step of disposing the plurality of material layers comprises the step of disposing at least one electrode within the material layers; and

selectively removing a portion of the plurality of material layers and the at least one electrode to form a cavity, wherein the cavity is capable of at least partially supporting at least one micro-component.

28. The method of claim 27, performed as part of a continuous inline process.

29. A method for forming a socket for use in a light-emitting display, comprising the steps of:

providing a substrate;

patterning the substrate so as to form a cavity in the substrate;

disposing a plurality of material layers on the substrate such that the plurality of material layers conform to the shape of the cavity, wherein the step of disposing a plurality of material layers on the substrate comprises the step of disposing at least one electrode within the material layers.

30. The method of claim 28, performed as part of a continuous inline process.

31. A light-emitting panel comprising:

at least one micro-component;

a socket, wherein the socket comprises a cavity, wherein the at least one micro-component and the cavity have complimentary shapes, and wherein the opening of the cavity is smaller than the diameter of a micro-component so that when the at least one micro-component is disposed in the cavity the at least one micro-component is held in place by the cavity; and

at least two electrodes, wherein the at least two electrodes are arranged so that voltage supplied to the at least two electrodes causes one or more micro-components to emit radiation.

32. A light-emitting panel comprising:

a first substrate;

a plurality of material layers disposed on the first substrate, wherein each material layer of the plurality of material layers comprises an aperture;

a second substrate opposed to the first substrate;

a plurality of sockets, wherein each socket comprises a cavity and wherein the cavity is formed by aligning the apertures of the plurality of material layers;

a plurality of micro-components, wherein at least one micro-component of the plurality of micro-components is at least partially disposed in each socket;

a plurality of electrodes, wherein at least one electrode of the plurality of electrodes is disposed on or within the material layers.

33. The light-emitting display of claim 32, wherein at least two electrodes of the plurality of electrodes are arranged so that voltage supplied to the at least two electrodes causes one or more micro-components to emit radiation throughout the field of view of the light-emitting panel without crossing the at least two electrodes.

34. The light-emitting panel of claim 32, wherein the cavity is in a shape selected from the group consisting of a cube, a cone, a conical frustum, a paraboloid, spherical, cylindrical, a pyramid, a pyramidal frustum, a parallelepiped, and a prism.

35. The light-emitting panel of claim 32, wherein the depth of the cavity is selected to achieve a specific field of view for the light-emitting display.

36. The light-emitting panel of claim 32, wherein at least one socket is at least partially coated with phosphor.

37. The light-emitting panel of claim 32, wherein at least one socket is at least partially coated with a reflective material.

38. The light-emitting panel of claim 32, further comprising an adhesive or bonding agent disposed in the cavity.

39. The light-emitting panel of claim 32, wherein the plurality of material layers comprise at least one enhancement material selected from the group consisting of anti-glare coatings, touch sensitive surfaces, contrast enhancement coatings, and protective coatings.

40. The light-emitting panel of claim 32, wherein the plurality of material layers comprise at least one enhancement material selected from the group consisting of transistors, integrated-circuits, semiconductor devices, inductors, capacitors, resistors, diodes, control electronics, drive electronics, pulse-forming networks, pulse compressors, pulse transformers, and tuned-circuits.